increase concentration 10%, 15%, 20% and 25% within 24 to 48 hours after contrast media exposure was detected in 47 patients (17.67%), 35 patients (13.16%), 24 patients (9.02%) and 16 patients (6.02%), respectively. By logistic regression analysis, the independent predictor of major adverse events was cutoffs defined as increase in CyC 10% or sCr 25% (odds ratio3.89; 95% confidence interval, 1.20 to 12.54; P=0.02).
Conclusions: In patients undergoing percutaneous coronary intervention, cystatin C in combined with creatinine seems to be a reliable marker for the early diagnosis of contrast-induced acute kidney injury, and an independent predictor of MACEs.

GW25-e2330

Accelerated endothelialization with a CD105 antibody-coated stent

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Objectives: Endoglin/CD105 is an accessory protein of the transforming growth factor-β receptor system that plays a critical role in proliferation of endothelial cells and neovasculature. Here, we aimed to assess the effect of novel stents coated with antibodies to endoglin (ENDs) on coronary neointima formation.
Methods: Thirty ENDs, thirty CD34 stents (CD34s), thirty sirolimus-eluting stents (SESs), and thirty bare metal stents (BMSs) were randomly assigned and placed in the coronary arteries in 40 juvenile pigs. Histomorphometric analysis and scanning electron microscopy were performed after stent implantation.
Results: Our results showed that after 7 days, there was no difference in the neointimal area and percent area stenosis in ENDs compared with CD34s or SMSs or BMSs. After 14 days, the neointima area and percent area stenosis in ENDs and CD34s and SESs were markedly decreased than those in BMSs (P<0.05). Moreover, the percentage of reendothelialization was significantly higher in ENDs and CD34s than that in SESs or BMSs (P<0.05) at 7 and 14 days. There was no difference in the neointima area and percent area stenosis and percentage of reendothelialization in ENDs compared with CD34s. The artery injury and the inflammationscores were similar in all groups at 7 and 14 days.
Conclusions: In conclusion, similar to CD34s,our results demonstrated for the first time to our knowledge that endoglin antibody-coated stents can markedly reduce restenosis by enhancing reendothelialization in the porcine model and potentially offer a new approach to prevent restenosis.

GW25-e2475

Prvention of contrast-induced Nephropathy with l-carnitine in Coronary Heart Disease Patients with Diabetes Mellitus undergoing percutaneous coronary intervention

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Objectives: To evaluate the safety and efficacy of l-carnitine in prevention of contrast-induced nephropathy (CIN) in coronary heart disease (CHD) patients with diabetes mellitus (DM) undergoing percutaneous coronary intervention and assess the value of determination of urine kidney injury molecule-1 (KIM-1) protein concentration in the early diagnosis of CIN.
Methods: A single-center prospective randomized controlled trial was performed, 145 CHD patients with DM were divided randomly into groups control (n=73, receiving only 0.9% sodium chloride solution for routine hydration) and intervention (n=72, based on routine hydration receiving l-carnitine 3.0 g to join saline 250 ml of intravenous infusion in 0.9% sodium chloride 3d before operation, and on day l,2,respectively,after operation).All entrants in surgery on regular check. The renal function of all patients were accessed before and 1-2 days after operation. And 15ml urine was collected before and 2h,6h,12h,24h,48h after operation and centrifuged at 3,000r/min in 4°C for 20 minters then 1 ml supernatant was collected which stored in -80°C Ultra-low temperature freezer until use. Urine KIM-1 level was measured by Enzyme-linked immunosorbent assay (ELISA).
Results: The two groups were well matched for baseline characteristics, the average amount of contrast medium during operation. There were 19 cases of CIN of the 145 patients (13.1%). The incidence of CIN was 19.2% (14/73) in sodium chloride group while 6.9% (5/72) in l-carnitine group. The incidence of contrast-induced nephropathy was lower in l-carnitine group than in control, but the difference was significant (6.9% vs 19.2%, P <0.05).There was a significant difference (P <0.05) between the urine KIM-1 level of 2, 6, 12, 24, 48 h (4015.83±855.96, 5095.32±1235.09, 5982.04±1506.02, 6984.20±1441.87, 6078.81±1519.56) pg/ml after operation and the urine KIM-1 level (3515.98±954.58) pg/ml before operation. There was not a significant difference between the Scr level at 24h after operation and before the operation. CIN can be diagnosed by urine KIM-1 at least 24h ahead Scr. The area under the ROC curve of urine KIM-1 24h after operation is 0.856, confidence interval of AUC 95% is (0.782,0.929). If the critical point of the diagnosis of CIN by the urine KIM-1 is 6327.755pg/ml, the sensitivity is 73.7% and the specificity is 85.7%. Bivariate shows that the level of KIM-1 before and 24,48h after operation positively correlated with Scr at the same time. Binary logistic regression shows: advanced age, left heart insufficiency, high does of contrast agent before operation are the independent risk facts of CIN.
Conclusions: Short-term application of l-carnitine has the trend of lowering contrast-induced nephropathy in CHD patients with DM. The results show that urinary KIM-1 levels can be used as an indicator for early diagnosis of CIN.

GW25-e2520

The availability of stent enhancement to guide percutaneous coronary intervention for ostial lesions by stent boost subtract imaging: comparison with intravascular ultrasound

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Objectives: Percutaneous coronary intervention (PCI) of ostial lesions is complex and is technically very demanding. Intravascular ultrasound (IVUS) is considered the gold standard method to guide PCI but has several limitations. Stent Boost Subtract (SBS) imaging is an enhancement of the radiologic edge of the stent by digital management of regular X-ray images. The purpose of this study is to determine the availability of stent enhancement with SBS during ostial PCI by comparison with intravascular IVUS.
Methods: We investigated SBS and IVUS after stent implantation in 58 ostial lesions in 55 patients. Ostial lesions included both native aorto-ostial or major coronary vessel lesions. SBS and IVUS was performed in all patients to obtain improved stent location and to detect optimal release and deployment.
Results: We defined the SBS and IVUS criteria for adequate stent deployment. IVUS findings showed inadequate stent deployment in 10/58 observations (17.2%). Eight SBS images showed inadequate stent expansion. SBS predicted inadequate findings of IVUS with 100% specificity, 80% sensitivity, meanwhile, a significant positive correlation was observed between SBS-MSA and MSA by IVUS with a regression coefficient of 0.95.
Conclusions: Imaging techniques have a primary role during ostial PCI. SBS is a simple and quick method that offers several advantages, enabling improved stent location, adequate stent expansion and optimal apposition of the struts to the wall. SBS imaging could be conventionally used during ostial PCI, especially in centers where IVUS is not used routinely.

GW25-e3414

Clinical Study of Coronary Artery Lesion in Patients With Angina Pectoris by Virtual Histology Intravascular Ultrasound

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Objectives: To observe the characteristics of coronary artery lesion in patients with unstable and stable angina by virtual histology intravascular ultrasound.
Methods: A total of 199 patients with angina pectoris were enrolled in our study, they were divided into stable angina group (101 cases) and unstable angina pectoris group (98 cases) according to clinical symptoms, ECG and myocardial enzyme. Coronary angiography to determine the "criminals" vessels. Comparison of the coronary artery lesions' indicators in minimal lumen area measured by grayscale and virtual histology intravascular ultrasound were made between the unstable angina group and stable angina group respectively. Grayscale intravascular ultrasound index: external elastic membrane (EEM), lumen cross-sectional area (LA), plaque area (PA), plaque burden (PB), remodeling index (RI), plaque eccentricity index (EI) ;Virtual histology intravascular ultrasound index: the plaque composition of calcified tissue, fibrous tissue, lipid tissue and necrotic tissue.
Results: Two sets of results at the external elastic membrane area, lumen area, plaque area, eccentricity index, remodeling index have no significant difference (t=1.392, -.0345, 1.921, 0.378, 0.857, $P>0.05$). Compared with stable angina group, unstable angina pectoris group in minimal lumen area have larger external elastic membrane area, smaller lumen area, greater plaque area, the greater the eccentric index and remodeling index. Necrotic core (red) area and percentage of lesion composition in unstable angina group was significantly higher than that instable angina group (t=2.361, 2.418 $P<0.05$). Two sets of results at lipid and calcification area and plaque distribution percentage have no statistically significant differences (t=1.045, 1.884, 0.787, $P>0.05$).
Conclusions: Necrotic core area and percentage of plaque composition in the unstable angina group is larger. "Criminals" lesions are more unstable and more easily complicated with acute cardiovascular events.